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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of:

TI-28480

Alan L. Davis, et al

Serial No:

10

Filed:

For:

Method and System for Displaying Translation Information

PRELIMINARY AMENDMENT

15

Ass't Commissioner for Patents

Washington, DC 20231

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Lola Aguilar
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Dear Sir:

Prior to examination of the U. S. Patent Application enclosed herewith, please amend
the Application as follows.

25

In the Title

Please delete:

"INTERACTIVE TRANSLATION SYSTEM AND METHOD" and insert - - METHOD
AND SYSTEM FOR DISPLAYING TRANSLATION INFORMATION - - therefor.

30

In the Specification

After the Title, please insert:

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-- This application is a division of Application 09/106,244, filed October 28, 1999 - -.

TELETYPE UNIT

5 In the Claims

Please delete claims 1 through 27.

Please add claims 28 through 47.

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28. A graphical user interface for a translation system, comprising:
a source window operable to display at least a portion of a source file; and
a translation window operable to display at least a portion of a translation file
simultaneously with the source window.

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29. The interface of Claim 28, wherein corresponding groups of elements in the
source and translation files are aligned in the source and translation windows.

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30. The interface of Claim 29, further comprising a synchronized scrolling
mechanism operable to maintain alignment between corresponding groups in the source and
translation windows.

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31. The interface of Claim 28, wherein at least one of the source and translation
windows is operable to display a status icon for elements in the window.

32. The interface of Claim 31, wherein the status icon indicates that the
translation of an element is incorrect.

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33. The interface of Claim 31, wherein the status icon indicates that the
translation of an element should be confirmed by the user.

34. The interface of Claim 31, wherein the status icon indicates that the
translation of an element could be improved with additional information.

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35. The interface of Claim 31, wherein the status icon indicates that additional
information is needed for the translation of an element.

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36. The interface of Claim 28, wherein selection of an element in one of the windows automatically selects corresponding elements in the other window.

37. The interface of Claim 28, further comprising an output window indicating
10 each source element for which additional information is needed to complete translation.

38. The interface of Claim 28, further comprising an output window indicating each source element for which user interaction is indicated.

39. A method for displaying translation information, comprising:
15 displaying at least a portion of a source file in a source window; and
displaying at least a portion of a translation file in a translation window
simultaneously with the source window.

40. The method of Claim 39, further comprising aligning corresponding groups of
20 elements in the source and translation files in the source and translation windows.

41. The method of Claim 39, further comprising maintaining alignment of
25 corresponding groups in the source and translation windows during scrolling operations.

42. The method of Claim 39, further comprising prompting a user for additional
information to aid the translation of the source file.

43. The method of Claim 39, further comprising prompting a user for additional
30 information to aid the translation of an element by displaying a status icon for the element in
at least one of the source and translation windows.

44. The method of Claim 43, wherein the status icon indicates that the
translation of an element is incorrect.

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5 45. The method of Claim 43, wherein the status icon indicates that the translation of an element should be confirmed by user.

 46. The method of Claim 43, wherein the status icon indicates that the translation of an element could be improved with additional information.

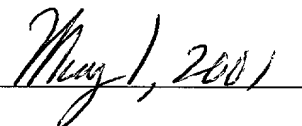
10 47. The method of Claim 28, further comprising displaying a listing of all source elements for which user interaction is indicated.

15 Respectfully submitted,



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20 Dated:



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30 **DELETED CLAIMS**

1. A translation system, comprising:
 a front end for identifying source elements in a source file; and
 a back end for generating a translation file having translation elements
corresponding to translation of said identified source elements and having an interface for
35 receiving inputs for modifying said translation.

2. The system of Claim 1, wherein the source file is for a source device and the translation file is for a disparate target device.

3. The system of Claim 1, wherein the source file is a linear assembly file for a target device and the translation file is a scheduled assembly file for that device.

40 4. The system of Claim 1, wherein the source file is an assembly language file.

5 5. The system of Claim 4, wherein the translation file is an assembly language file.

6. The system of Claim 1, wherein said translation is a context-dependent translation based on static analysis of the source file.

7. The system of Claim 1, wherein the back end further comprises:

10 a translator for performing a context-dependent translation, the translator comprising:

 a translation machine description for mapping source opcodes to target opcodes;

 a source machine description containing a description of source opcodes and source operands in a generic representation;

15 a target machine description containing a description of target opcodes and target operands in a generic representation; and

 wherein the translator receives a source instruction from said front end, utilizes the translation machine description and source machine description and target machine description to translate source elements into target elements.

20 8. The system of Claim 7, wherein the proper target opcode is chosen from a group of potential target opcodes by comparing the target opcode and target operand with the source opcode and source operand.

9. The system of Claim 7, wherein two or more source opcodes can be combined to a single target opcode when there is a target opcode that represents the two or more source code opcodes.

25 10. The system of Claim 1, wherein the user interface is a graphical user interface.

11. The system of Claim 10, wherein the graphical user interface displays at least a portion of the source elements in a source window, at least a portion of the translation elements in a translation window, and the source and translation windows are displayed side-by-side.

12. The system of Claim 11, wherein corresponding groups of elements of the source and translation files are aligned in the source and translation windows.

13. The system of Claim 11, wherein at least one of the source and translation windows is operable to display a status icon for an element in the window.

35 14. A method for performing translation comprising:

5 receiving a source file;
identifying source elements in the source file;
generating a translation file having translation elements by performing a context-
dependent translation of the source elements;
displaying the translation elements in an interface for receiving user inputs; and
10 in response to user inputs, automatically regenerating selected translation elements
based on the user inputs.

15 15. The method of Claim 14, wherein the source file is for a source device and the
translation file is for a disparate target device.

16. The method of Claim 14, wherein the source file is a linear assembly file for a
15 target device and the translation file is a scheduled assembly file for said target device.

17. The method of Claim 14, wherein the source file is an assembly language file.

18. The method of Claim 17, wherein the translation file is an assembly language
file.

19. The method of Claim 14, further comprising:
20 performing static analysis of the source elements in the source file; and
performing context-dependent translation of the source elements based on the static
analysis.

20. The method of Claim 14, wherein the step of generating a translation file
further comprises:

25 converting an opcode of a source machine to an opcode of a translation machine file
by comparing the source opcode to possible translation opcodes;

converting the operand of the source opcode by comparing an operand of the source
opcode in a generic expression with a generic expression for a translation operand;

combining the translation opcode and the translation operand to form a translation.

30 21. The method of Claim 20, wherein the step of converting an opcode of the
source file further comprises choosing a translation opcode from a group of potential
translation opcodes by comparing the translation opcode and translation operand with the
source opcode and source operand.

22. The method of Claim 20, wherein the step of converting the source opcode
35 further comprises the step of combining two or more source opcodes into a single translation
opcode when there is a translation opcode that represents the two or more source opcodes.

- 5 23. The method of Claim 14, wherein the user interface is a graphical user interface.
24. The method of Claim 23, further comprising:
 displaying the source elements in a source window;
 displaying the translation elements in a translation window; and
10 displaying the source and translation windows side-by-side in the graphical user interface.
25. The method of Claim 24, further comprising aligning corresponding groups of elements of the source and translation files in the source and translation windows.
26. The method of Claim 24, further comprising displaying a status icon for an
15 element in at least one of the source and translation windows.
27. A translation system, comprising:
 a computer capable of executing a program, and
 an interactive program for translating code for a first processor into code for a second processor and capable of being executed on said computer.